SAVIAC MAMMA

Shock & Vibration Information Analysis Center (SAVIAC)

"Training the Next Generation Tester" Education Project

Joel Leifer SAVIAC PM

Presented at the 21st Transducer Workshop June 23, 2004 Lexington Park, MD

SAVIAC MAMA

What is SAVIAC

- is a jointly-funded activity sponsored by the Army, Navy, Air Force, DTRA, and the DOE laboratories
- serves as a central information resource for Government activities, contractors, and academics concerned with structural dynamics design, analysis, and testing; and shock physics and weapons effects.
- focuses on the engineering tools and techniques needed for the design, analysis and testing of systems subjected to dynamic conditions and loading, including water shock, vibration, blast, impact, crash, and mechanical/climatic environments.
- encompasses ships, aircraft, spacecraft, ground vehicles, ground structures, machinery and humans; any area where Government engineers have a responsibility for the design, analysis or testing of mechanical or structural systems.
- is specifically chartered to perform information research and analysis tasks for requesting activities.
- is staffed by experienced mechanical and aerospace engineers with backgrounds in structural dynamics.
- is operated by HI-TEST Laboratories, Inc. in Columbia, MD under contract to the US Army Engineer Waterways Experiment Station. The <u>SAVIAC Team</u> consists of some of the top names in Shock & Vibration from the SAVIAC community. Technical direction is provided by the <u>SAVIAC Director</u> who is advised by a multi-agency Technical Advisory Group consisting of members from DOD, NASA, DOE, and commercial organizations.

SAVIAC MMMM

What we will do in the next 30 minutes

- Discuss the need to train the next generation of testers/experimenters
- · Decide on the appropriate vehicle for the training
- · Develop a list of topics
- Create a fantasy team (active or retired) you would like to see teach the topics
- Discuss how long it would take and the cost to develop
- Pass a motion that this type of paper will not be accepted at future workshops

SAVIAC MMM

Is there a need?

- Forget that you are too busy, this is an exercise in wishful thinking
- In this room is a significant body of knowledge and expertise in testing
- Lets take a poll
 - How many were taught by a senior person?
 - How many struggled without help?
- What education is out there now?

SAVIAC HAMMAN

How would you do it?

- Short Course
- Web Based
- Conference
- Distance Learning
- Home Study
- Reference Book
- Other
- Hand on Training
- Field Exercises
- Small Groups
- Apprenticeship

SAVIAC MAMMA

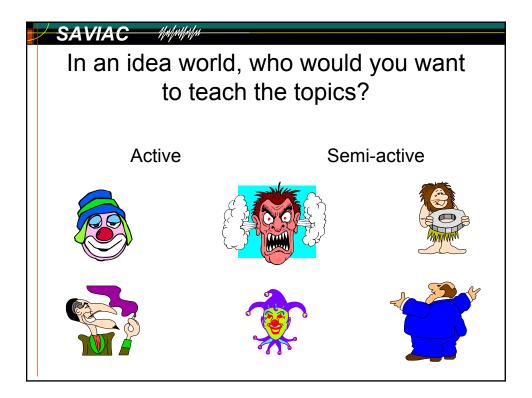
What would be the topics?

- Transducers
 - How they work
 - Selection
- Cables
- Signal Conditioning
- Data Acquisition
- Test Planning
- Test Set-up
- Test Reports

SAVIAC MAMPA

What would be the Topics

- · Sensor placement
- · Data validation/sanity check
- Matching sensor to requirements
- · Samples of use
- · Specific transducers
- Test lab/QA
- · Measurement integrity
- Basic methodology checklist
- Data presentation
- Lessons learned
- Technical writing
- EMI/RFI
- · Grounding/noise
- Reality based customer communication
- Measurement uncertainty



SAVIAC HAMMAN

Who would teach

- Larry Brown fielding instrumentation
- Terry Sharton safety, best practices
- Current users
- Manufacturers
- Strether Smith
- Guys in back row
- Jeff Schmidt data quality

SAVIAC MAMMA

What would be the cost and schedule?

- Could we have something ready to discuss at next year's workshop?
- Do some (most) of you already have pieces almost ready to go?
- Can we find a funding source (gov't or commercial)?
- Or should we select a project manager and project team?

SAVIAC MAMPAN

75th Shock & Vibration Symposium

- Featuring PCB Piezotronics, Northrop Grumman Newport News Shipbuilding & Naval Surface Warfare Center, Dahlgren Division
- October 17 22, 2004
- · Cavalier Hotel in Virginia Beach, VA
- Still accepting abstracts

SAVIAC MAMAM

Thank you for your time and indulgence in doing this exercise

Call me if you would like to participate in this project

Joel Leifer 301 596-0100 joel.leifer@saviac.org